2004 Index
IEEE Transactions on Education
Vol. 47

This index covers all technical items — papers, correspondence, reviews, etc. — that appeared in this periodical during 2004, and items from previous years that were commented upon or corrected in 2004. Departments and other items may also be covered if they have been judged to have archival value.

The Author Index contains the primary entry for each item, listed under the first author's name. The primary entry includes the coauthors' names, the title of the paper or other item, and its location, specified by the publication abbreviation, year, month, and inclusive pagination. The Subject Index contains entries describing the item under all appropriate subject headings, plus the first author's name, the publication abbreviation, month, and year, and inclusive pages. Subject cross-references are included to assist in finding items of interest. Note that the item title is found only under the primary entry in the Author Index.

AUTHOR INDEX

A

Abe, K., T. Tateoka, M. Suzuki, Y. Maeda, K. Kono, and T. Watanabe. An integrated laboratory for processor organization, compiler design, and computer networking; *T-E Aug 04* 311-320

Adams, J.D., B.S. Rogers, and L.J. Leifer. Microtechnology, nanotechnology, and the scanning-probe microscope: an innovative course; *T-E Feb 04* 51-56

Adams, J.D., B.S. Rogers, and L.J. Leifer. Effective technology transfer to the undergraduate and graduate classroom as a result of a novel Ph.D. Program; *T-E May 04* 227-231

Ahlgren, D.J., *see* Pack, D.J., *T-E Aug 04* 369-376

Albaladejo, J., *see* Hassan, H., *T-E Nov 04* 446-N452

Alesanco, A., *see* Garcia, J., *T-E May 04* 284-294

Anderson, D.V., *see* Hong, P.S., *T-E Aug 04* 301-310

Ando, B., S. Graziani, and N. Pitrone. Stand-alone laboratory sessions in sensors and signal processing; *T-E Feb 04* 4-9

Aniserowicz, K. Comparison of different numerical methods for solving boundary-value problems in electromagnetics; *T-E May 04* 241-246

Apon, A., J. Mache, R. Buyya, and Hai Jin. Cluster computing in the classroom and integration with computing curricula 2001; *T-E May 04* 188-195

Arjona L., M.A, *see* Sellschopp, F.S., *T-E Feb 04* 57-64

Armentrout, D.L., *see* DeLyser, R.R., *T-E Nov 04* 453-458

Assuncao, E., *see* Teixeira, M.C.M., *T-E Aug 04* 405-409

Avanzato, R., *see* Pack, D.J., *T-E Aug 04* 369-376

Aviles, R., *see* Ruiz-del-Solar, J., *T-E Nov 04* 474-480

B

Ban-Leong Ooi, and Mook-Seng Leong. A novel course on microwave monolithic integrated circuit design, theory, and characterization; *T-E Feb 04* 134-140

Barkeshli, K., and J.L. Volakis. Electromagnetic scattering from thin strips. I. Analytical solutions for wide and narrow strips; *T-E Feb 04* 100-106

Barkeshli, K., and J.L. Volakis. Electromagnetic scattering from thin strips. II. Numerical solution for strips of arbitrary size; *T-E Feb 04* 107-113

Barnwell, T.P., *see* Hong, P.S., *T-E Aug 04* 301-310

Basilio, J.C., and M.V. Moreira. State-space parameter identification in a second control laboratory; *T-E May 04* 204-210

Basu, K.P., and S.K. Mukerji. Experimental investigation into operation under single-phasing condition of a three-phase induction motor connected across a zigzag transformer; *T-E Aug 04* 365-368

Becerra, V.M. Solving optimal control problems with state constraints using nonlinear programming and simulation tools; *T-E Aug 04* 377-384

Benavides, N.D., *see* Williams, J.M., *T-E Nov 04* 436-445

Bhunia, C., S. Giri, S. Kar, S. Haldar, and P. Purkait. A low-cost PC-based virtual oscilloscope; *T-E May 04* 295-299

Bischoff, A., *see* Hoyer, H., *T-E Feb 04* 121-126

Brandao Faria, J.A. A pedagogical example of the application of transmission-line theory to study conductor grounding effects; *T-E Feb 04* 141-145

Bruce, J.W., J.C. Harden, and R.B. Reese. Cooperative and progressive design experience for embedded systems; *T-E Feb 04* 83-92

Buyya, R., *see* Apon, A., *T-E May 04* 188-195

C

Cale, J.L., *see* Williams, J.M., *T-E Nov 04* 436-445

Callahan, D.W., and L.B. Callahan. Looking for engineering students? Go home; *T-E Dec 04* 500-502

Callahan, L.B., *see* Callahan, D.W., *T-E Dec 04* 500-502

Calpe, J., *see* Soria, E., *T-E Feb 04* 127-133

Camps, G., *see* Soria, E., *T-E Feb 04* 127-133

Chamas, I., and M.A.E. Nokali. Automated PSpice simulation as an effective design tool in teaching power electronics; *T-E Aug 04* 415-421

Chambers, J., *see* Soria, E., *T-E Feb 04* 127-133

Chang Rong-Seng, *see* Pan, T.-T., *T-E Aug 04* 348-355

Chedid, L.G., *see* Karanian, B.A., *T-E May 04* 157-159

Chen, P.M. An automated feedback system for computer organization projects; *T-E May 04* 232-240

Chen, T.Y., and Pak-Lok Poon. Experience with teaching black-box testing in a computer science/software engineering curriculum; *T-E Feb 04* 42-50

Chiang, H.K., *see* Pan, T.-T., *T-E Aug 04* 348-355

Comer, D.J., and D.T. Comer. Operation of analog MOS circuits in the weak or moderate inversion region; *T-E Nov 04* 430-435

Comer, D.T., *see* Comer, D.J., *T-E Nov 04* 430-435

Craig, I.K., Xiaohua Xia, and J.W. Venter. Introducing HIV/AIDS education into the electrical engineering curriculum at the University of Pretoria; *T-E Feb 04* 65-73

Craig, I.K., *see* de Klerk, E., *T-E May 04* 276-283

D

Dalcher, D., *see* Lavi, J.Z., *T-E May 04* 247-253

Daly, C., and J.M. Horgan. An automated learning system for Java programming; *T-E Feb 04* 10-17

Davis, A.M. A simple way of obtaining the reduced Jordan form of a state equation; *T-E Nov 04* 481-489

de Klerk, E., and I.K. Craig. A laboratory experiment to teach closed-loop system identification; *T-E May 04* 276-283

Del Val, D., *see* Slator, B.M., *T-E May 04* 269-275

DeLyser, R.R., R.W. Quine, P.J. Rullkoetter, and D.L. Armentrout. A sophomore capstone course in measurement and automated data acquisition; *T-E Nov 04* 453-458

Dominguez, C., *see* Hassan, H., *T-E Nov 04* 446-N452

Dormido, S., *see* Sanchez, J., *T-E Aug 04* 321-329

Durrani, T.S. 2003 IEEE Educational Activities Board awards; *T-E May 04* 160-164

E

Eccleston, K.W. Teaching microwave amplifier design at the undergraduate level; *T-E Feb 04* 146-152

Echard, J.D., *see* Hong, P.S., *T-E Aug 04* 301-310

Elwakil, A.S., *see* Halalu, W.M., *T-E Feb 04* 93-99

Emadi, A., and T.M. Jacobius. Interprofessional projects in advanced automotive power systems: an integrated education and research multidisciplinary approach; *T-E Aug 04* 356-360

F

Fan Ping-Lin, *see* Pan, T.-T., *T-E Aug 04* 348-355

Fikioris, G. Analytical studies supplementing the Smith chart; *T-E May 04* 261-268

Frangeskou, I., *see* Shiakolas, P.S., *T-E Feb 04* 33-41
Fukuda, S., *see* Kikuchi, T., *T-E Feb 04* 26-32
Fukuzaki, A., *see* Kikuchi, T., *T-E Feb 04* 26-32
Furse, C., R.J. Woodward, and M.A. Jensen. Laboratory project in wireless FSK receiver design; *T-E Feb 04* 18-25

G

Gallant, R., *see* Lavi, J.Z., *T-E May 04* 247-253
Galvao, R.K.H., *see* Paiva, H.M., *T-E Aug 04* 385-388
Garcia, F.J., and M.N. Moreno. Software modeling techniques for a first course in software engineering: a workshop-based approach; *T-E May 04* 180-187
Garcia, J., and A. Alesanco. Web-based system for managing a telematics laboratory network; *T-E May 04* 284-294
Giri, S., *see* Bhunia, C., *T-E May 04* 295-299
Gopal, A., *see* Stanley, R.J., *T-E May 04* 211-219
Grau, B.C. How to teach basic quantum mechanics to computer scientists and electrical engineers; *T-E May 04* 220-226
Graziani, S., *see* Ando, B., *T-E Feb 04* 4-9
Guerrero, J.D.M., *see* Soria, E., *T-E Feb 04* 127-133

H

Hacker, C., and R. Sitte. Interactive teaching of elementary digital logic design with WinLogiLab; *T-E May 04* 196-203
Hai Jin, *see* Apon, A., *T-E May 04* 188-195
Halalu, W.M., and A.S. Elwakil. Research-oriented junior/senior design projects: an analog circuit design example; *T-E Feb 04* 93-99
Haldar, S., *see* Bhunia, C., *T-E May 04* 295-299
Hall, T.S., and J.O. Hamblen. System-on-a-programmable-chip development platforms in the classroom; *T-E Nov 2004* 502-507
Hamblen, J.O., *see* Hall, T.S., *T-E Nov 2004* 502-507
Harden, J.C., *see* Bruce, J.W., *T-E Feb 04* 83-92
Harris, D.A., *see* Kikuchi, T., *T-E Feb 04* 26-32
Hassan, H., J.-M. Martinez, C. Dominguez, A. Perles, and J. Albaladejo. Innovative methodology to improve the quality of electronic engineering formation through teaching industrial computer engineering; *T-E Nov 04* 446-N452
Hayes, M.H., *see* Hong, P.S., *T-E Aug 04* 301-310
Hill, C., *see* Slator, B.M., *T-E May 04* 269-275
Hong, P.S., D.V. Anderson, D.B. Williams, J.R. Jackson, T.P. Barnwell, M.H. Hayes, R.W. Schafer, and J.D. Echard. DSP for practicing engineers: a case study in Internet course delivery; *T-E Aug 04* 301-310
Horgan, J.M., *see* Daly, C., *T-E Feb 04* 10-17
Hoyer, H., A. Jochheim, C. Rohrig, and A. Bischoff. A multiuser virtual-reality environment for a tele-operated laboratory; *T-E Feb 04* 121-126
Hurley, W.G., M. Hynes, and W.H. Wolfle. PWM control of a magnetic suspension system; *T-E May 04* 165-173
Hurley, W.G., *see* Wedlock, B.D., *T-E Nov 04* 508
Hynes, M., *see* Hurley, W.G., *T-E May 04* 165-173

I

Idowu, P. In search of a perfect power engineering program; *T-E Aug 04* 410-414

J

Jackson, E.W., *see* Kuc, R., *T-E Feb 04* 74-82
Jackson, J.R., *see* Hong, P.S., *T-E Aug 04* 301-310
Jacobius, T.M., *see* Emadi, A., *T-E Aug 04* 356-360
Jensen, M.A., *see* Furse, C., *T-E Feb 04* 18-25
Jiang, J.-A., *see* Pan, T.-T., *T-E Aug 04* 348-355
Jin Hai, *see* Apon, A., *T-E May 04* 188-195
Jochheim, A., *see* Hoyer, H., *T-E Feb 04* 121-126

K

Kar, S., *see* Bhunia, C., *T-E May 04* 295-299
Karanian, B.A., and L.G. Chedid. Guest editorial: 21st Century trends that influence constructing creative classroom environments [special issue intro.]; *T-E May 04* 157-159
Kayssi, A.I. The average capacitor current method for delay calculation in MOS circuits; *T-E Aug 04* 330-339
Kenjo, T., *see* Kikuchi, T., *T-E Feb 04* 26-32
Kikuchi, T., S. Fukuda, A. Fukuzaki, K. Nagaoka, K. Tanaka, T. Kenjo, and D.A. Harris. DVTS-based remote laboratory across the Pacific over the gigabit network; *T-E Feb 04* 26-32
Koenig, A.C., *see* Williams, J.M., *T-E Nov 04* 436-445
Kono, K., *see* Abe, K., *T-E Aug 04* 311-320
Kuang Weidong, *see* Yuan, J.S., *T-E Aug 04* 397-404
Kuc, A., *see* Kuc, R., *T-E Feb 04* 74-82
Kuc, R., E.W. Jackson, and A. Kuc. Teaching introductory autonomous robotics with JavaScript simulations and actual robots; *T-E Feb 04* 74-82

L

Lavi, J.Z., D. Dalcher, M. Mannion, and R. Gallant. Engineering of computer-based systems-a proposed curriculum for a degree program at bachelor level; *T-E May 04* 247-253
Lawrence, R. Teaching data structures using competitive games; *T-E Nov 04* 459-466
Leifer, L.J., *see* Adams, J.D., *T-E Feb 04* 51-56
Leifer, L.J., *see* Adams, J.D., *T-E May 04* 227-231
Leong Mook-Seng, *see* Ban-Leong Ooi, *T-E Feb 04* 134-140
Lopez-Martin, A.J. Teaching random signals and noise: an experimental approach; *T-E May 04* 174-179

M

Machado, E.R.M.D., *see* Teixeira, M.C.M., *T-E Aug 04* 405-409
Mache, J., *see* Apon, A., *T-E May 04* 188-195
Maeda, Y., *see* Abe, K., *T-E Aug 04* 311-320
Mannion, M., *see* Lavi, J.Z., *T-E May 04* 247-253
Martinez, J.-M., *see* Hassan, H., *T-E Nov 04* 446-N452
Martinez, M., *see* Soria, E., *T-E Feb 04* 127-133
Moallem, M. A laboratory testbed for embedded computer control; *T-E Aug 04* 340-347
Mook-Seng Leong, *see* Ban-Leong Ooi, *T-E Feb 04* 134-140
Moreira, M.V., *see* Basilio, J.C., *T-E May 04* 204-210
Moreno, M.N., *see* Garcia, F.J., *T-E May 04* 180-187
Morilla, F., *see* Sanchez, J., *T-E Aug 04* 321-329
Moss, R.H., *see* Stanley, R.J., *T-E May 04* 211-219
Mukerji, S.K., *see* Basu, K.P., *T-E Aug 04* 365-368

N

Nagaoka, K., *see* Kikuchi, T., *T-E Feb 04* 26-32
Nokali, M.A.E., *see* Chamas, I., *T-E Aug 04* 415-421

O

Ooi Ban-Leong, *see* Ban-Leong Ooi, *T-E Feb 04* 134-140

P

Pack, D.J., R. Avanzato, D.J. Ahlgren, and I.M. Verner. Fire-fighting mobile robotics and interdisciplinary design-comparative perspectives; *T-E Aug 04* 369-376
Paiva, H.M., and R.K.H. Galvao. Simulation of dynamic systems with output saturation; *T-E Aug 04* 385-388
Pak-Lok Poon, *see* Chen, T.Y., *T-E Feb 04* 42-50
Pan, T.-T., Ping-Lin Fan, H.K. Chiang, Rong-Seng Chang, and J.-A. Jiang. Mechatronic experiments course design: a myoelectric controlled partial-hand prosthesis project; *T-E Aug 04* 348-355
Pastor, R., *see* Sanchez, J., *T-E Aug 04* 321-329
Pekarek, S.D., *see* Williams, J.M., *T-E Nov 04* 436-445
Perles, A., *see* Hassan, H., *T-E Nov 04* 446-N452
Ping-Lin Fan, *see* Pan, T.-T., *T-E Aug 04* 348-355
Pitrone, N., *see* Ando, B., *T-E Feb 04* 4-9
Piyabongkarn, D., *see* Shiakolas, P.S., *T-E Feb 04* 33-41
Poon Pak-Lok, *see* Chen, T.Y., *T-E Feb 04* 42-50
Pota, H.R. A new derivation of the law of the junctions; *T-E Nov 04* 497-499
Purkait, P., *see* Bhunia, C., *T-E May 04* 295-299

Q

Quine, R.W., *see* DeLyser, R.R., *T-E Nov 04* 453-458

R

Reese, R.B., *see* Bruce, J.W., *T-E Feb 04* 83-92
Rogers, B.S., *see* Adams, J.D., *T-E Feb 04* 51-56
Rogers, B.S., *see* Adams, J.D., *T-E May 04* 227-231
Rohrig, C., *see* Hoyer, H., *T-E Feb 04* 121-126
Rong-Seng Chang, *see* Pan, T.-T., *T-E Aug 04* 348-355
Rothwell, E.J. Using transport equations in the teaching of electromagnetics; *T-E Aug 04* 361-364
Ruiz-del-Solar, J., and R. Aviles. Robotics courses for children as a motivation tool: The Chilean experience; *T-E Nov 04* 474-480
Rullkoetter, P.J., *see* DeLyser, R.R., *T-E Nov 04* 453-458

S

Sagnard, F. Educational graphical interfaces to learn about radiation and propagation of electromagnetic waves; *T-E Aug 04* 389-396
Sanchez, J., S. Dormido, R. Pastor, and F. Morilla. A Java/Matlab-based environment for remote control system laboratories: illustrated with an inverted pendulum; *T-E Aug 04* 321-329
Schafer, R.W., *see* Hong, P.S., *T-E Aug 04* 301-310
See, K.Y., *see* Zhao, Y., *T-E Nov 04* 425-429
Sellschopp, F.S., and M.A Arjona L. An automated system for frequency response analysis with application to an undergraduate laboratory of electrical machines; *T-E Feb 04* 57-64
Shiakolas, P.S., S.R. Van Schenck, D. Piyabongkarn, and I. Frangeskou. Magnetic levitation hardware-in-the-loop and MATLAB-based experiments for reinforcement of neural network control concepts; *T-E Feb 04* 33-41
Shirsavar, S.A. Teaching practical design of switch-mode power supplies; *T-E Nov 04* 467-473
Sitte, R., *see* Hacker, C., *T-E May 04* 196-203
Slator, B.M., C. Hill, and D. Del Val. Teaching computer science with virtual worlds; *T-E May 04* 269-275
Soria, E., J. Calpe, J. Chambers, M. Martinez, G. Camps, and J.D.M. Guerrero. A novel approach to introducing adaptive filters based on the LMS algorithm and its variants; *T-E Feb 04* 127-133
Sridharan, K. A course on web languages and web-based applications; *T-E May 04* 254-260
Stanley, R.J., S.E. Watkins, A. Gopal, and R.H. Moss. A web-shareable real-world imaging problem for enhancing an image-processing curriculum; *T-E May 04* 211-219
Suzuki, M., *see* Abe, K., *T-E Aug 04* 311-320

T

Tanaka, K., *see* Kikuchi, T., *T-E Feb 04* 26-32
Tateoka, T., *see* Abe, K., *T-E Aug 04* 311-320
Teixeira, M.C.M., E. Assuncao, and E.R.M.D. Machado. A method for plotting the complementary root locus using the root-locus (positive gain) rules; *T-E Aug 04* 405-409
Tichenor, J.L., *see* Williams, J.M., *T-E Nov 04* 436-445

V

Van Schenck, S.R., *see* Shiakolas, P.S., *T-E Feb 04* 33-41
Venter, J.W., *see* Craig, I.K., *T-E Feb 04* 65-73
Verner, I.M., *see* Pack, D.J., *T-E Aug 04* 369-376
Volakis, J.L., *see* Barkeshli, K., *T-E Feb 04* 100-106
Volakis, J.L., *see* Barkeshli, K., *T-E Feb 04* 107-113

W

Watanabe, T., *see* Abe, K., *T-E Aug 04* 311-320
Watkins, S.E., *see* Stanley, R.J., *T-E May 04* 211-219
Wedlock, B.D., and W.G. Hurley. Corrections to "PWM control of a magnetic suspension system" [May 04 165 173]; *T-E Nov 04* 508
Wegmann, A. Theory and practice behind the course designing enterprisewide IT systems; *T-E Nov 04* 490-496
Weidong Kuang, *see* Yuan, J.S., *T-E Aug 04* 397-404
Williams, D.B., *see* Hong, P.S., *T-E Aug 04* 301-310
Williams, J.M., J.L. Cale, N.D. Benavides, J.D. Wooldridge, A.C. Koenig, J.L. Tichenor, and S.D. Pekarek. Versatile hardware and software tools for educating students in power electronics; *T-E Nov 04* 436-445
Wolfle, W.H., *see* Hurley, W.G., *T-E May 04* 165-173
Woodward, R.J., *see* Furse, C., *T-E Feb 04* 18-25
Wooldridge, J.D., *see* Williams, J.M., *T-E Nov 04* 436-445

X

Xiaohua Xia, *see* Craig, I.K., *T-E Feb 04* 65-73
Xia Xiaohua, *see* Craig, I.K., *T-E Feb 04* 65-73

Y

Yuan, J.S., and Weidong Kuang. Teaching asynchronous design in digital integrated circuits; *T-E Aug 04* 397-404

Z

Zhao, Y., and K.Y. See. A practical approach to EMC education at the undergraduate level; *T-E Nov 04* 425-429
Zhiping Zhou From classrooms to the real engineering world: the training program in the Microelectronics Research Center at Georgia Tech; *T-E Feb 04* 114-120
Zhou Zhiping, *see* Zhiping Zhou, *T-E Feb 04* 114-120

SUBJECT INDEX

A

AC machines; cf. Synchronous machines
AC motors; cf. Induction motors
Adaptive filters
introducing adaptive filters, LMS algm. and variants, approach. *Soria, E., + , T-E Feb 04* 127-133
Adaptive systems; cf. Adaptive filters
Algebra; cf. Boolean algebra
Analog integrated circuits; cf. Bipolar analog integrated circuits
Antenna radiation patterns
learn, radiation and propag. of EM waves, educational graphical interfaces. *Sagnard, F., T-E Aug 04* 389-396
Antennas; cf. Antenna radiation patterns
Application specific integrated circuits; cf. System-on-chip
Asynchronous logic circuits
digital IC, teaching asynchronous design. *Yuan, J.S., + , T-E Aug 04* 397-404
Asynchronous machines; cf. Induction motors
Asynchronous rotating machines
freq. response anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64
Automatic programming
computer organization projects, automated feedback syst. *Chen, P.M., T-E May 04* 232-240
Awards
2003 IEEE Educational Activities Board awards. *Durrani, T.S., T-E May 04* 160-164

B

Bioelectric potentials; cf. Electromyography
Biomedical engineering education
mechatronic expts. course design. *Pan, T.-T., + , T-E Aug 04* 348-355
Bipolar analog integrated circuits
research-oriented junior/senior design projects. *Halalu, W.M., + , T-E Feb 04* 93-99
Bipolar integrated circuits; cf. Bipolar analog integrated circuits
Bipolar transistors
new derivation of the law of the junctions. *Pota, H.R., T-E Nov 04* 497-499
Boltzmann equation
teaching of electromagnetics, transport eqns. *Rothwell, E.J., T-E Aug 04* 361-364

+ Check author entry for coauthors

Boolean algebra
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
Boundary integral equations
thin strips., EM scatt., I. *Barkeshli, K., + , T-E Feb 04* 100-106
thin strips., EM scatt., II. *Barkeshli, K., + , T-E Feb 04* 107-113
Boundary value problems
different num. methods for solving BVP, electromagnetics, comp. *Aniserowicz, K., T-E May 04* 241-246
Business communication
theory and practice behind the course designing enterprisewide IT systems. *Wegmann, A., T-E Nov 04* 490-496

C

CAD
system-on-a-programmable-chip development platforms in the classroom. *Hall, T.S., + , T-E Nov 2004* 502-507
Circuit synthesis
automated PSpice simul., effective design tool, teaching power electron. *Chamas, I., + , T-E Aug 04* 415-421
Client-server systems
tele-operated lab., multiuser VR environ. *Hoyer, H., + , T-E Feb 04* 121-126
Closed loop systems
teach closed-loop syst. ident., lab. expt. *de Klerk, E., + , T-E May 04* 276-283
CMOS integrated circuits
operation of analog MOS circuits in the weak or moderate inversion region. *Comer, D.J., + , T-E Nov 04* 430-435
Collaborative work
processor organization, compiler design, computer networking, integr. lab. *Abe, K., + , T-E Aug 04* 311-320
tele-operated lab., multiuser VR environ. *Hoyer, H., + , T-E Feb 04* 121-126
Combinational logic circuits
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
Communication engineering education
different num. methods for solving BVP, electromagnetics, comp. *Aniserowicz, K., T-E May 04* 241-246
managing, telematics lab. net., web-based syst. *Garcia, J., + , T-E May 04* 284-294
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
Communication system operations and management
managing, telematics lab. net., web-based syst. *Garcia, J., + , T-E May 04* 284-294
Communication system software
managing, telematics lab. net., web-based syst. *Garcia, J., + , T-E May 04* 284-294
Computer aided instruction
21st Century trends that influence constructing creative classroom environments (special issue). *T-E May 04* 157-159, 165-299
21st Century trends that influence constructing creative classroom environments (special issue intro.). *Karanian, B.A., + , T-E May 04* 157-159
appl. of transm.-line theory, study conductor grounding effects, pedagogical example. *Brandao Faria, J.A., T-E Feb 04* 141-145
DVTS-based rem. lab. across Pacific, gigabit net. *Kikuchi, T., + , T-E Feb 04* 26-32
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
freq. response anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64
learn, radiation and propag. of EM waves, educational graphical interfaces. *Sagnard, F., T-E Aug 04* 389-396
managing, telematics lab. net., web-based syst. *Garcia, J., + , T-E May 04* 284-294
microwave monolithic IC design, theory, charactn., course. *Ban-Leong Ooi, + , T-E Feb 04* 134-140
practicing engineers, case study, Internet course delivery, DSP. *Hong, P.S., + , T-E Aug 04* 301-310
research-oriented junior/senior design projects. *Halalu, W.M., + , T-E Feb 04* 93-99
sens. and sig. proc., stand-alone lab. sessions. *Ando, B., + , T-E Feb 04* 4-9
teaching introductory autonomous robotics, JavaScript simul. and actual robots. *Kuc, R., + , T-E Feb 04* 74-82
tele-operated lab., multiuser VR environ. *Hoyer, H., + , T-E Feb 04* 121-126
thin strips., EM scatt., I. *Barkeshli, K., + , T-E Feb 04* 100-106
thin strips., EM scatt., II. *Barkeshli, K., + , T-E Feb 04* 107-113
Computer aided instruction; cf. Courseware
Computer applications; cf. CAD
Computer graphics; cf. Virtual reality
Computerized control; cf. Intelligent control
Computer networks
processor organization, compiler design, computer networking, integr. lab. *Abe, K., + , T-E Aug 04* 311-320
Computer science education
1st. course, software engng., software modeling techs. *Garcia, F.J., + , T-E May 04* 180-187
classroom and integrat., comput. curricula 2001, cluster comput. *Apon, A., + , T-E May 04* 188-195
computer-based systs., proposed curriculum for degree program, bachelor level, engng. *Lavi, J.Z., + , T-E May 04* 247-253
course on web languages and web-based applications. *Sridharan, K., T-E May 04* 254-260
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
embedded computer control, lab. testbed. *Moallem, M., T-E Aug 04* 340-347
embedded systs., cooperative/progressive design experience. *Bruce, J.W., + , T-E Feb 04* 83-92
Java prog., automated learning syst. *Daly, C., + , T-E Feb 04* 10-17
low-cost PC-based virtual oscilloscope. *Bhunia, C., + , T-E May 04* 295-299
organization projects, automated feedback syst. *Chen, P.M., T-E May 04* 232-240
practicing engineers, case study, Internet course delivery, DSP. *Hong, P.S., + , T-E Aug 04* 301-310
processor organization, compiler design, computer networking, integr. lab. *Abe, K., + , T-E Aug 04* 311-320
sci./software engng. curriculum, experience, teaching black-box testing. *Chen, T.Y., + , T-E Feb 04* 42-50
sens. and sig. proc., stand-alone lab. sessions. *Ando, B., + , T-E Feb 04* 4-9
teach basic quantum mech., computer scientists and elec. engineers. *Grau, B.C., T-E May 04* 220-226
teaching computer sci., virtual worlds. *Slator, B.M., + , T-E May 04* 269-275
Computer testing
organization projects, automated feedback syst. *Chen, P.M., T-E May 04* 232-240
Continuing education
undergraduate/graduate classroom, result of Ph.D, program, effective technol. transfer. *Adams, J.D., + , T-E May 04* 227-231
Control engineering; cf. Control engineering education
Control engineering education
embedded computer control, lab. testbed. *Moallem, M., T-E Aug 04* 340-347
embedded systs., cooperative/progressive design experience. *Bruce, J.W., + , T-E Feb 04* 83-92
introducing HIV/AIDS education, elec. engng. curriculum, Univ. of Pretoria. *Craig, I.K., + , T-E Feb 04* 65-73
mag. suspen. syst., PWM control. *Hurley, W.G., + , T-E May 04* 165-173
mechatronic expts. course design. *Pan, T.-T., + , T-E Aug 04* 348-355
plotting complementary root locus, root-locus (positive gain) rules, method. *Teixeira, M.C.M., + , T-E Aug 04* 405-409
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
rem. control syst. labs., Java/Matlab-based environ. *Sanchez, J., + , T-E Aug 04* 321-329
second control lab., state-space param. ident. *Basilio, J.C., + , T-E May 04* 204-210
solving optimal control problems, state constraints, nonlin. prog. and simul. tools. *Becerra, V.M., T-E Aug 04* 377-384

teach closed-loop syst. ident., lab. expt. *de Klerk, E., + , T-E May 04* 276-283
teaching introductory autonomous robotics, JavaScript simul. and actual robots. *Kuc, R., + , T-E Feb 04* 74-82
Control systems; cf. Closed loop systems
Control theory; cf. Optimal control
Convergence of numerical methods; cf. Numerical stability
Converters
teaching practical design of switch-mode power supplies. *Shirsavar, S.A., T-E Nov 04* 467-473
Courseware
computer sci./software engng. curriculum, experience, teaching black-box testing. *Chen, T.Y., + , T-E Feb 04* 42-50
introducing HIV/AIDS education, elec. engng. curriculum, Univ. of Pretoria. *Craig, I.K., + , T-E Feb 04* 65-73
Java prog., automated learning syst. *Daly, C., + , T-E Feb 04* 10-17
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
Current density
thin strips., EM scatt., I. *Barkeshli, K., + , T-E Feb 04* 100-106
thin strips., EM scatt., II. *Barkeshli, K., + , T-E Feb 04* 107-113
Curve fitting
delay calc., MOS cets., av. capacitor current method. *Kayssi, A.I., T-E Aug 04* 330-339

D

Data acquisition
low-cost PC-based virtual oscilloscope. *Bhunia, C., + , T-E May 04* 295-299
sens. and sig. proc., stand-alone lab. sessions. *Ando, B., + , T-E Feb 04* 4-9
sophomore capstone course in measurement and automated data acquisition. *DeLyser, R.R., + , T-E Nov 04* 453-458
Data processing
computer organization projects, automated feedback syst. *Chen, P.M., T-E May 04* 232-240
Data structures
teaching data structures using competitive games. *Lawrence, R., T-E Nov 04* 459-466
DC-DC power conversion
automated PSpice simul., effective design tool, teaching power electron. *Chamas, I., + , T-E Aug 04* 415-421
DC-DC power converters
teaching practical design of switch-mode power supplies. *Shirsavar, S.A., T-E Nov 04* 467-473
DC machines
freq. response anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64
DC machines; cf. DC motors
DC motors
dyn. systs., output saturation, simul. *Paiva, H.M., + , T-E Aug 04* 385-388
Demography
introducing HIV/AIDS education, elec. engng. curriculum, Univ. of Pretoria. *Craig, I.K., + , T-E Feb 04* 65-73
Design automation
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
microwave monolithic IC design, theory, charactn., course. *Ban-Leong Ooi, + , T-E Feb 04* 134-140
research-oriented junior/senior design projects. *Halalu, W.M., + , T-E Feb 04* 93-99
Design methodology
embedded systs., cooperative/progressive design experience. *Bruce, J.W., + , T-E Feb 04* 83-92
fire-fighting mobile robotics and interdisciplinary design-comparative perspectives. *Pack, D.J., + , T-E Aug 04* 369-376
Differential equations
different num. methods for solving BVP, electromagnetics, comp. *Aniserowicz, K., T-E May 04* 241-246
Digital circuits; cf. Digital integrated circuits
Digital control
embedded computer control, lab. testbed. *Moallem, M., T-E Aug 04* 340-347
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
versatile hardware and software tools for educating students in power electronics. *Williams, J.M., + , T-E Nov 04* 436-445
Digital integrated circuits
teaching asynchronous design. *Yuan, J.S., + , T-E Aug 04* 397-404
Digital systems; cf. Computer networks
Diodes
new derivation of the law of the junctions. *Pota, H.R., T-E Nov 04* 497-499
Display instrumentation; cf. Oscilloscopes
Distortion measurement
operation of analog MOS circuits in the weak or moderate inversion region. *Comer, D.J., + , T-E Nov 04* 430-435
Distributed algorithms; cf. Parallel algorithms
Distributed processing; cf. Client-server systems; Computer networks
Distributed programming; cf. Parallel programming
Dynamic response; cf. Transient response

E

Education
21st Century trends that influence constructing creative classroom environments (special issue). *T-E May 04* 157-159, 165-299
21st Century trends that influence constructing creative classroom environments (special issue intro.). *Karanian, B.A., + , T-E May 04* 157-159
practical approach to EMC education at the undergraduate level. *Zhao, Y., + , T-E Nov 04* 425-429
shortage of engineering students. *Callahan, D.W., + , T-E Dec 04* 500-502
teaching practical design of switch-mode power supplies. *Shirsavar, S.A., T-E Nov 04* 467-473
versatile hardware and software tools for educating students in power electronics. *Williams, J.M., + , T-E Nov 04* 436-445
Education; cf. Computer science education; Continuing education; Control engineering education; Engineering education
Educational computing
teaching data structures using competitive games. *Lawrence, R., T-E Nov 04* 459-466
Educational computing; cf. Computer aided instruction
Educational technology; cf. Educational computing
Electrical engineering; cf. Electrical engineering education; Electronic engineering
Electrical engineering education
anal. studies supplementing Smith chart. *Fikioris, G., T-E May 04* 261-268
appl. of transm.-line theory, study conductor grounding effects, pedagogical example. *Brandao Faria, J.A., T-E Feb 04* 141-145
DVTS-based rem. lab. across Pacific, gigabit net. *Kikuchi, T., + , T-E Feb 04* 26-32
dyn. systs., output saturation, simul. *Paiva, H.M., + , T-E Aug 04* 385-388
embedded systs., cooperative/progressive design experience. *Bruce, J.W., + , T-E Feb 04* 83-92
introducing adaptive filters, LMS algm. and variants, approach. *Soria, E., + , T-E Feb 04* 127-133
introducing HIV/AIDS education, elec. engng. curriculum, Univ. of Pretoria. *Craig, I.K., + , T-E Feb 04* 65-73
learn, radiation and propag. of EM waves, educational graphical interfaces. *Sagnard, F., T-E Aug 04* 389-396
practicing engineers, case study, Internet course delivery, DSP. *Hong, P.S., + , T-E Aug 04* 301-310
single-phasing condition of 3-phase IM connected across, zigzag transformer, expt. investig., operation. *Basu, K.P., + , T-E Aug 04* 365-368
teach basic quantum mech., computer scientists and elec. engineers. *Grau, B.C., T-E May 04* 220-226
teaching microwave amp. design, undergraduate level. *Eccleston, K.W., T-E Feb 04* 146-152
teaching of electromagnetics, transport eqns. *Rothwell, E.J., T-E Aug 04* 361-364
thin strips., EM scatt., I. *Barkeshli, K., + , T-E Feb 04* 100-106
thin strips., EM scatt., II. *Barkeshli, K., + , T-E Feb 04* 107-113
wireless FSK receiver design, lab. project. *Furse, C., + , T-E Feb 04* 18-25

Electrical engineering education; cf. Power engineering education
Electric current; cf. Current density
Electric drives; cf. Motor drives
Electric machines; cf. DC machines
Electric motors; cf. DC motors; Motor drives
Electromagnetic analysis
different num. methods for solving BVP, electromagnetics, comp. *Aniserowicz, K., T-E May 04* 241-246
Electromagnetic compatibility
practical approach to EMC education at the undergraduate level. *Zhao, Y., + , T-E Nov 04* 425-429
Electromagnetic fields
teaching of electromagnetics, transport eqns. *Rothwell, E.J., T-E Aug 04* 361-364
Electromagnetic propagation
learn, radiation and propag. of EM waves, educational graphical interfaces. *Sagnard, F., T-E Aug 04* 389-396
Electromagnetic radiation
learn, radiation and propag. of EM waves, educational graphical interfaces. *Sagnard, F., T-E Aug 04* 389-396
Electromagnetic scattering
thin strips., EM scatt., I. *Barkeshli, K., + , T-E Feb 04* 100-106
thin strips., EM scatt., II. *Barkeshli, K., + , T-E Feb 04* 107-113
Electromagnetism; cf. Maxwell equations
Electromyography
mechatronic expts. course design. *Pan, T.-T., + , T-E Aug 04* 348-355
Electronic engineering
improving the quality of electronic engineering formation through teaching industrial computer engineering. *Hassan, H., + , T-E Nov 04* 446-N452
Electronic engineering computing; cf. SPICE
Electronics engineering education
automated PSpice simul., effective design tool, teaching power electron. *Chamas, I., + , T-E Aug 04* 415-421
different num. methods for solving BVP, electromagnetics, comp. *Aniserowicz, K., T-E May 04* 241-246
digital IC, teaching asynchronous design. *Yuan, J.S., + , T-E Aug 04* 397-404
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
low-cost PC-based virtual oscilloscope. *Bhunia, C., + , T-E May 04* 295-299
mechatronic expts. course design. *Pan, T.-T., + , T-E Aug 04* 348-355
microwave monolithic IC design, theory, charactn., course. *Ban-Leong Ooi, + , T-E Feb 04* 134-140
real engng. world, from classrooms. *Zhiping Zhou, T-E Feb 04* 114-120
research-oriented junior/senior design projects. *Halalu, W.M., + , T-E Feb 04* 93-99
sens. and sig. proc., stand-alone lab. sessions. *Ando, B., + , T-E Feb 04* 4-9
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
Engineering
shortage of engineering students. *Callahan, D.W., + , T-E Dec 04* 500-502
Engineering; cf. Engineering education
Engineering education
1st. course, software engng., software modeling techs. *Garcia, F.J., + , T-E May 04* 180-187
21st Century trends that influence constructing creative classroom environments (special issue). *T-E May 04* 157-159, 165-299
21st Century trends that influence constructing creative classroom environments (special issue intro.). *Karanian, B.A., + , T-E May 04* 157-159
fire-fighting mobile robotics and interdisciplinary design-comparative perspectives. *Pack, D.J., + , T-E Aug 04* 369-376
microtechnology, nanotechnology, scanning-probe microscope. *Adams, J.D., + , T-E Feb 04* 51-56
practical approach to EMC education at the undergraduate level. *Zhao, Y., + , T-E Nov 04* 425-429
shortage of engineering students. *Callahan, D.W., + , T-E Dec 04* 500-502
undergraduate/graduate classroom, result of Ph.D, program, effective technol. transfer. *Adams, J.D., + , T-E May 04* 227-231
versatile hardware and software tools for educating students in power electronics. *Williams, J.M., + , T-E Nov 04* 436-445
Engineering education; cf. Control engineering education; Electrical engineering education
Enterprise resource planning
theory and practice behind the course designing enterprisewide IT systems. *Wegmann, A., T-E Nov 04* 490-496
Equations; cf. Differential equations; Equations of state
Equations of state
obtaining the reduced Jordan form of a state equation. *Davis, A.M., T-E Nov 04* 481-489

F

Feedforward neural networks
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
Field effect analog integrated circuits; cf. MOS analog integrated circuits
Field effect digital integrated circuits; cf. MOS digital integrated circuits
Field programmable gate arrays
system-on-a-programmable-chip development platforms in the classroom. *Hall, T.S., + , T-E Nov 2004* 502-507
File organization; cf. Data structures
Filters; cf. Adaptive filters
Finite automata; cf. Finite state machines
Finite state machines
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
teaching introductory autonomous robotics, JavaScript simul. and actual robots. *Kuc, R., + , T-E Feb 04* 74-82
Fourier transforms
thin strips., EM scatt., I. *Barkeshli, K., + , T-E Feb 04* 100-106
thin strips., EM scatt., II. *Barkeshli, K., + , T-E Feb 04* 107-113
Frequency modulation; cf. Frequency shift keying
Frequency response
anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64
Frequency shift keying
wireless FSK receiver design, lab. project. *Furse, C., + , T-E Feb 04* 18-25
Functions; cf. Transfer functions

G

Graphical user interfaces
learn, radiation and propag. of EM waves, educational graphical interfaces. *Sagnard, F., T-E Aug 04* 389-396
Grounding
appl. of transm.-line theory, study conductor grounding effects, pedagogical example. *Brandao Faria, J.A., T-E Feb 04* 141-145

H

Hardware design languages
digital IC, teaching asynchronous design. *Yuan, J.S., + , T-E Aug 04* 397-404
Human factors
robotics courses for children as a motivation tool, the Chilean experience. *Ruiz-del-Solar, J., + , T-E Nov 04* 474-480

I

Identification
teach closed-loop syst. ident., lab. expt. *de Klerk, F., + , T-E May 04* 276-283
Identification; cf. Parameter estimation; State estimation
Image processing
enhancing, image-proc. curriculum, web-shareable real-world imaging problem. *Stanley, R.J., + , T-E May 04* 211-219
Image sequence analysis
enhancing, image-proc. curriculum, web-shareable real-world imaging problem. *Stanley, R.J., + , T-E May 04* 211-219

Induction motors
single-phasing condition of 3-phase IM connected across, zigzag transformer, expt. investig., operation. *Basu, K.P., + , T-E Aug 04* 365-368
Industrial control; cf. Process control
Industrial engineering
improving the quality of electronic engineering formation through teaching industrial computer engineering. *Hassan, H., + , T-E Nov 04* 446-N452
Information networks; cf. Internet
Information technology
theory and practice behind the course designing enterprisewide IT systems. *Wegmann, A., T-E Nov 04* 490-496
Integral equations; cf. Boundary integral equations
Integrated circuit design
delay calc., MOS ccts., av. capacitor current method. *Kayssi, A.I., T-E Aug 04* 330-339
digital IC, teaching asynchronous design. *Yuan, J.S., + , T-E Aug 04* 397-404
microwave monolithic IC design, theory, charactn., course. *Ban-Leong Ooi, + , T-E Feb 04* 134-140
research-oriented junior/senior design projects. *Halalu, W.M., + , T-E Feb 04* 93-99
Integrated circuits; cf. Digital integrated circuits
Integration (mathematics)
delay calc., MOS ccts., av. capacitor current method. *Kayssi, A.I., T-E Aug 04* 330-339
Integro-differential equations; cf. Boltzmann equation
Intelligent control
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
Interactive systems
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
Interactive systems; cf. Virtual reality
Internet
course on web languages and web-based applications. *Sridharan, K., T-E May 04* 254-260
DVTS-based rem. lab. across Pacific, gigabit net. *Kikuchi, T., + , T-E Feb 04* 26-32
embedded computer control, lab. testbed. *Moallem, M., T-E Aug 04* 340-347
practicing engineers, case study, Internet course delivery, DSP. *Hong, P.S., + , T-E Aug 04* 301-310
rem. control syst. labs., Java/Matlab-based environ. *Sanchez, J., + , T-E Aug 04* 321-329
teaching computer sci., virtual worlds. *Slator, B.M., + , T-E May 04* 269-275

K

Knowledge based systems; cf. Intelligent control

L

Laboratories
processor organization, compiler design, computer networking, integr. lab. *Abe, K., + , T-E Aug 04* 311-320
Learning systems
teaching data structures using competitive games. *Lawrence, R., T-E Nov 04* 459-466
Least mean square methods
introducing adaptive filters, LMS algm. and variants, approach. *Soria, E., + , T-E Feb 04* 127-133
Local area networks; cf. Wireless LAN

M

Machine vision
enhancing, image-proc. curriculum, web-shareable real-world imaging problem. *Stanley, R.J., + , T-E May 04* 211-219
Magnetic field effects; cf. Magnetic levitation
Magnetic levitation
mag. suspen. syst., PWM control. *Hurley, W.G., + , T-E May 04* 165-173
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
Mathematical analysis; cf. Differential equations
Mathematical programming; cf. Nonlinear programming
Mathematics; cf. Probability; Statistics
Maxwell equations
teaching of electromagnetics, transport eqns. *Rothwell, E.J., T-E Aug 04* 361-364
Measurement
sophomore capstone course in measurement and automated data acquisition. *DeLyser, R.R., + , T-E Nov 04* 453-458
Measurement; cf. Distortion measurement
Mechatronics
DVTS-based rem. lab. across Pacific, gigabit net. *Kikuchi, T., + , T-E Feb 04* 26-32
mechatronic expts. course design. *Pan, T.-T., + , T-E Aug 04* 348-355
Medicine; cf. Pediatrics
Microcontrollers
mechatronic expts. course design. *Pan, T.-T., + , T-E Aug 04* 348-355
Microelectromechanical devices
microtechnology, nanotechnology, scanning-probe microscope. *Adams, J.D., + , T-E Feb 04* 51-56
Microprocessor chips; cf. Microcontrollers
Microstrip components
wireless FSK receiver design, lab. project. *Furse, C., + , T-E Feb 04* 18-25
Microwave amplifiers
teaching microwave amp. design, undergraduate level. *Eccleston, K.W., T-E Feb 04* 146-152
Microwave devices; cf. Microwave amplifiers; Microwave receivers
Microwave receivers
wireless FSK receiver design, lab. project. *Furse, C., + , T-E Feb 04* 18-25
MMICs
microwave monolithic IC design, theory, charactn., course. *Ban-Leong Ooi, + , T-E Feb 04* 134-140
Mobile robots
fire-fighting mobile robotics and interdisciplinary design-comparative perspectives. *Pack, D.J., + , T-E Aug 04* 369-376
teaching introductory autonomous robotics, JavaScript simul. and actual robots. *Kuc, R., + , T-E Feb 04* 74-82
Modeling
theory and practice behind the course designing enterprisewide IT systems. *Wegmann, A., T-E Nov 04* 490-496
Moment methods
thin strips., EM scatt., II. *Barkeshli, K., + , T-E Feb 04* 107-113
Monitoring
enhancing, image-proc. curriculum, web-shareable real-world imaging problem. *Stanley, R.J., + , T-E May 04* 211-219
MOS analog integrated circuits
operation of analog MOS circuits in the weak or moderate inversion region. *Comer, D.J., + , T-E Nov 04* 430-435
MOS digital integrated circuits
delay calc., MOS ccts., av. capacitor current method. *Kayssi, A.I., T-E Aug 04* 330-339
MOS integrated circuits; cf. CMOS integrated circuits; MOS analog integrated circuits; MOS digital integrated circuits
Motion-planning
fire-fighting mobile robotics and interdisciplinary design-comparative perspectives. *Pack, D.J., + , T-E Aug 04* 369-376
Motor drives
versatile hardware and software tools for educating students in power electronics. *Williams, J.M., + , T-E Nov 04* 436-445
Muscle; cf. Electromyography

N

Nanotechnology
microtechnology, nanotechnology, scanning-probe microscope. *Adams, J.D., + , T-E Feb 04* 51-56
undergraduate/graduate classroom, result of Ph.D, program, effective technol. transfer. *Adams, J.D., + , T-E May 04* 227-231

Networks (circuits); cf. Oscillators
Network synthesis; cf. Integrated circuit design; Printed circuit design
Neural nets; cf. Neurocontrollers
Neurocontrollers
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
Noise
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
Nonlinear circuits
research-oriented junior/senior design projects. *Halalu, W.M., + , T-E Feb 04* 93-99
Nonlinear programming
solving optimal control problems, state constraints, nonlin. prog. and simul. tools. *Becerra, V.M., T-E Aug 04* 377-384
Nonlinear systems
dyn. systs., output saturation, simul. *Paiva, H.M., + , T-E Aug 04* 385-388
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
rem. control syst. labs., Java/Matlab-based environ. *Sanchez, J., + , T-E Aug 04* 321-329
Numerical analysis; cf. Curve fitting
Numerical stability
introducing adaptive filters, LMS algm. and variants, approach. *Soria, E., + , T-E Feb 04* 127-133

O

Object oriented programming
Java prog., automated learning syst. *Daly, C., + , T-E Feb 04* 10-17
Optical transducers
sens. and sig. proc., stand-alone lab. sessions. *Ando, B., + , T-E Feb 04* 4-9
Optimal control
solving optimal control problems, state constraints, nonlin. prog. and simul. tools. *Becerra, V.M., T-E Aug 04* 377-384
Oscillators
corrections to "PWM control of a magnetic suspension system" (May 04 165 173). *Wedlock, B.D., + , T-E Nov 04* 508
Oscilloscopes
low-cost PC-based virtual oscilloscope. *Bhunia, C., + , T-E May 04* 295-299

P

Parallel algorithms
classroom and integrat., comput. curricula 2001, cluster comput. *Apon, A., + , T-E May 04* 188-195
Parallel processing; cf. Parallel algorithms; Parallel programming
Parallel programming
classroom and integrat., comput. curricula 2001, cluster comput. *Apon, A., + , T-E May 04* 188-195
Parameter estimation
second control lab., state-space param. ident. *Basilio, J.C., + , T-E May 04* 204-210
Pediatrics
robotics courses for children as a motivation tool, the Chilean experience. *Ruiz-del-Solar, J., + , T-E Nov 04* 474-480
Piecewise linear approximation
research-oriented junior/senior design projects. *Halalu, W.M., + , T-E Feb 04* 93-99
Planning; cf. Enterprise resource planning
p-n junctions
new derivation of the law of the junctions. *Pota, H.R., T-E Nov 04* 497-499
Poles and zeros
plotting complementary root locus, root-locus (positive gain) rules, method. *Teixeira, M.C.M., + , T-E Aug 04* 405-409
Power converters; cf. DC-DC power converters
Power electronics
automated PSpice simul., effective design tool, teaching power electron. *Chamas, I., + , T-E Aug 04* 415-421
mag. suspen. syst., PWM control. *Hurley, W.G., + , T-E May 04* 165-173
teaching practical design of switch-mode power supplies. *Shirsavar, S.A., T-E Nov 04* 467-473
versatile hardware and software tools for educating students in power electronics. *Williams, J.M., + , T-E Nov 04* 436-445
Power engineering; cf. Power engineering education
Power engineering education
advanced automotive power systs., interprofessional projects. *Emadi, A., + , T-E Aug 04* 356-360
freq. response anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64
perfect power engng. program, search. *Idowu, P., T-E Aug 04* 410-414
Power supply circuits; cf. Switched mode power supplies
Printed circuit design
practical approach to EMC education at the undergraduate level. *Zhao, Y., + , T-E Nov 04* 425-429
Probability
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
Problem-solving
embedded systs., cooperative/progressive design experience. *Bruce, J.W., + , T-E Feb 04* 83-92
fire-fighting mobile robotics and interdisciplinary design-comparative perspectives. *Pack, D.J., + , T-E Aug 04* 369-376
tele-operated lab., multiuser VR environ. *Hoyer, H., + , T-E Feb 04* 121-126
Process control
improving the quality of electronic engineering formation through teaching industrial computer engineering. *Hassan, H., + , T-E Nov 04* 446-N452
teach closed-loop syst. ident., lab. expt. *de Klerk, E., + , T-E May 04* 276-283
Professional aspects
shortage of engineering students. *Callahan, D.W., + , T-E Dec 04* 500-502
Program compilers
processor organization, compiler design, computer networking, integr. lab. *Abe, K., + , T-E Aug 04* 311-320
Programmable logic arrays; cf. Field programmable gate arrays
Programming; cf. Automatic programming; Robot programming; Software tools
Program processors; cf. Program compilers
Prosthetics
mechatronic expts. course design. *Pan, T.-T., + , T-E Aug 04* 348-355
Protocols
managing, telematics lab. net., web-based syst. *Garcia, J., + , T-E May 04* 284-294
Pulse width modulated power converters
mag. suspen. syst., PWM control. *Hurley, W.G., + , T-E May 04* 165-173

Q

Quantum theory
teach basic quantum mech., computer scientists and elec. engineers. *Grau, B.C., T-E May 04* 220-226

R

Radio equipment; cf. Radio receivers
Radiofrequency amplifiers; cf. Microwave amplifiers
Radio receivers
wireless FSK receiver design, lab. project. *Furse, C., + , T-E Feb 04* 18-25
Receivers; cf. Microwave receivers; Radio receivers
Rectifiers
automated PSpice simul., effective design tool, teaching power electron. *Chamas, I., + , T-E Aug 04* 415-421
Robotics
robotics courses for children as a motivation tool, the Chilean experience. *Ruiz-del-Solar, J., + , T-E Nov 04* 474-480
Robot programming
fire-fighting mobile robotics and interdisciplinary design-comparative perspectives. *Pack, D.J., + , T-E Aug 04* 369-376
teaching introductory autonomous robotics, JavaScript simul. and actual robots. *Kuc, R., + , T-E Feb 04* 74-82
Robots; cf. Mobile robots; Robot programming

Root loci
plotting complementary root locus, root-locus (positive gain) rules, method. *Teixeira, M.C.M., + , T-E Aug 04* 405-409

S

Semiconductor junctions; cf. p-n junctions
Sequential logic circuits
elementary digital logic design, WinLogiLab, interactive teaching. *Hacker, C., + , T-E May 04* 196-203
Signal processing
introducing adaptive filters, LMS algm. and variants, approach. *Soria, E., + , T-E Feb 04* 127-133
practicing engineers, case study, Internet course delivery, DSP. *Hong, P.S., + , T-E Aug 04* 301-310
sens. and sig. proc., stand-alone lab. sessions. *Ando, B., + , T-E Feb 04* 4-9
Signal processing; cf. Image processing
Signal synthesis
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
Social sciences; cf. Teaching
Social sciences computing; cf. Educational computing
Software engineering
1st. course, software engng., software modeling techs. *Garcia, F.J., + , T-E May 04* 180-187
computer sci./software engng. curriculum, experience, teaching black-box testing. *Chen, T.Y., + , T-E Feb 04* 42-50
embedded systs., cooperative/progressive design experience. *Bruce, J.W., + , T-E Feb 04* 83-92
Software engineering; cf. Software tools
Software packages; cf. Courseware
Software testing
computer organization projects, automated feedback syst. *Chen, P.M., T-E May 04* 232-240
computer sci./software engng. curriculum, experience, teaching black-box testing. *Chen, T.Y., + , T-E Feb 04* 42-50
Software tools
reinforcement of neural net. control concepts, MAGLEV HWIR and MATLAB-based expts. *Shiakolas, P.S., + , T-E Feb 04* 33-41
Special issues and sections
21st Century trends that influence constructing creative classroom environments (special issue). *T-E May 04* 157-159, 165-299
21st Century trends that influence constructing creative classroom environments (special issue intro.). *Karanian, B.A., + , T-E May 04* 157-159
Spectral analysis
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
SPICE
automated PSpice simul., effective design tool, teaching power electron. *Chamas, I., + , T-E Aug 04* 415-421
Stability; cf. Numerical stability
State estimation
obtaining the reduced Jordan form of a state equation. *Davis, A.M., T-E Nov 04* 481-489
State space methods
second control lab., state-space param. ident. *Basilio, J.C., + , T-E May 04* 204-210
Statistics
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
Stochastic processes
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
Strip line components; cf. Microstrip components
Student experiments
advanced automotive power systs., interprofessional projects. *Emadi, A., + , T-E Aug 04* 356-360
DVTS-based rem. lab. across Pacific, gigabit net. *Kikuchi, T., + , T-E Feb 04* 26-32
freq. response anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64
mag. suspen. syst., PWM control. *Hurley, W.G., + , T-E May 04* 165-173
mechatronic expts. course design. *Pan, T.-T., + , T-E Aug 04* 348-355
rem. control syst. labs., Java/Matlab-based environ. *Sanchez, J., + , T-E Aug 04* 321-329
second control lab., state-space param. ident. *Basilio, J.C., + , T-E May 04* 204-210
sens. and sig. proc., stand-alone lab. sessions. *Ando, B., + , T-E Feb 04* 4-9
single-phasing condition of 3-phase IM connected across, zigzag transformer, expt. investig., operation. *Basu, K.P., + , T-E Aug 04* 365-368
teach closed-loop syst. ident., lab. expt. *de Klerk, E., + , T-E May 04* 276-283
teaching random sigs. and noise, expt. approach. *Lopez-Martin, A.J., T-E May 04* 174-179
tele-operated lab., multiuser VR environ. *Hoyer, H., + , T-E Feb 04* 121-126
wireless FSK receiver design, lab. project. *Furse, C., + , T-E Feb 04* 18-25
Switched mode power supplies
mag. suspen. syst., PWM control. *Hurley, W.G., + , T-E May 04* 165-173
Switching circuits; cf. Trigger circuits
Synchronous machines
freq. response anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64
System-on-chip
system-on-a-programmable-chip development platforms in the classroom. *Hall, T.S., + , T-E Nov 2004* 502-507

T

Teaching
21st Century trends that influence constructing creative classroom environments (special issue). *T-E May 04* 157-159, 165-299
21st Century trends that influence constructing creative classroom environments (special issue intro.). *Karanian, B.A., + , T-E May 04* 157-159
improving the quality of electronic engineering formation through teaching industrial computer engineering. *Hassan, H., + , T-E Nov 04* 446-N452
robotics courses for children as a motivation tool, the Chilean experience. *Ruiz-del-Solar, J., + , T-E Nov 04* 474-480
teaching data structures using competitive games. *Lawrence, R., T-E Nov 04* 459-466
teaching practical design of switch-mode power supplies. *Shirsavar, S.A., T-E Nov 04* 467-473
versatile hardware and software tools for educating students in power electronics. *Williams, J.M., + , T-E Nov 04* 436-445
Teaching; cf. Student experiments
Technology transfer
microtechnology, nanotechnology, scanning-probe microscope. *Adams, J.D., + , T-E Feb 04* 51-56
undergraduate/graduate classroom, result of Ph.D, program, effective technol. transfer. *Adams, J.D., + , T-E May 04* 227-231
Telecommunication; cf. Business communication
Telecommunication networks; cf. Computer networks
Telecommunication services; cf. Teleconferencing
Teleconferencing
DVTS-based rem. lab. across Pacific, gigabit net. *Kikuchi, T., + , T-E Feb 04* 26-32
Testing; cf. Computer testing
Thermodynamic properties; cf. Equations of state
Time domain analysis
appl. of transm.-line theory, study conductor grounding effects, pedagogical example. *Brandao Faria, J.A., T-E Feb 04* 141-145
Transfer functions
dyn. systs., output saturation, simul. *Paiva, H.M., + , T-E Aug 04* 385-388
research-oriented junior/senior design projects. *Halalu, W.M., + , T-E Feb 04* 93-99
Transformer windings
single-phasing condition of 3-phase IM connected across, zigzag transformer, expt. investig., operation. *Basu, K.P., + , T-E Aug 04* 365-368
Transforms; cf. Fourier transforms

+ Check author entry for coauthors

Transient response
delay calc., MOS ccts., av. capacitor current method. *Kayssi, A.I., T-E Aug 04* 330-339
Transistors; cf. Bipolar transistors
Transmission line theory
anal. studies supplementing Smith chart. *Fikioris, G., T-E May 04* 261-268
appl. of transm.-line theory, study conductor grounding effects, pedagogical example. *Brandao Faria, J.A., T-E Feb 04* 141-145
Trigger circuits
corrections to "PWM control of a magnetic suspension system" (May 04 165 173). *Wedlock, B.D., + , T-E Nov 04* 508
Two-port circuits
freq. response anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64

U

User interfaces
embedded computer control, lab. testbed. *Moallem, M., T-E Aug 04* 340-347
User interfaces; cf. Graphical user interfaces; User modeling
User modeling
freq. response anal., appl., undergraduate lab. of elec. machines, automated syst. *Sellschopp, F.S., + , T-E Feb 04* 57-64
sens. and sig. proc., stand-alone lab. sessions. *Ando, B., + , T-E Feb 04* 4-9

V

Very-large-scale integration
delay calc., MOS ccts., av. capacitor current method. *Kayssi, A.I., T-E Aug 04* 330-339
Virtual reality
DVTS-based rem. lab. across Pacific, gigabit net. *Kikuchi, T., + , T-E Feb 04* 26-32
teaching computer sci., virtual worlds. *Slator, B.M., + , T-E May 04* 269-275
tele-operated lab., multiuser VR environ. *Hoyer, H., + , T-E Feb 04* 121-126

W

Waveform analysis; cf. Spectral analysis
Windings; cf. Transformer windings
Wireless LAN
FSK receiver design, lab. project. *Furse, C., + , T-E Feb 04* 18-25